

Performance Comparison between the Baseline And the Personal Ice Cooling System Technologies

Performance Factor	Limited Stay Times (Baseline)	PICS (Innovative)
Average Stay Time	100 min. (70-85°F) 23 min. (> 85°F)	160 min. (70-85°F) 92 min. (> 85°F)
Average Rest Time due to Heat Stress Management¹	50 min. (70-85°F) 30 min. (> 85°F)	0 min. (70-85°F) 0 min. (> 85°F)
Cost per Productive Crew-Hour	\$120.25/hr (70-85°F) \$242.88/hr (> 85°F)	\$73.35/hr (70-85°F) \$83.68/hr (> 85°F)
PPE Usage	Cost of \$14.93/man-hour for PPE	Cost of \$8.12/mn-hour for PPE
Worker Comfort	Very uncomfortable conditions while in PPE in a hot working environment. Workers experience fatigue, are less alert, and more susceptible to heat stress.	Cooler body temperature and less fatigue as a result of the PICS. One worker commented that he felt his energy level was much greater with the PICS.
Overall D&D Schedule	Limited stay times reduce the amount of work performed in a work shift.	Longer stay times and resulting higher productivity could accelerate D&D schedule.

¹ These rest times only include breaks for managing heat stress and do not include other regular breaks throughout the work day.

² The Cost per Productive Crew-Hour is the average cost of a two-person crew to conduct one hour of field work considering both productive time in the field and non-productive time outside of the field including breaks needed for heat stress management, safety meetings, and regular breaks.